

# The ubiquitous *hūrī* maritime ethnography, archaeology and history in the western Indian Ocean

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## ***1. Introduction***

Since 2000, the Centre for Maritime Archaeology at the University of Southampton has undertaken ethnographical research in collaboration with other scholars into the *hūrī*, a class of vessel originally built as logboats and found throughout the Arabian Sea, Red Sea, and Gulf (fig. 1). This vessel takes its name from the Hindi *hōṛī*, from the Sanskrit *hoda*, and this has been transmitted as *hūrī* (plural *hawārī*) by Arabic-speaking traders of the vessel throughout the western Indian Ocean.

While the project does not claim to be comprehensive or exhaustive in its study of these vessels, it nevertheless represents the first systematic attempt to study *hūrīs* within the context of the broader Indian Ocean region within which they have traditionally operated. This paper outlines the basic characteristics of the *hūrīs* that have been studied, along with an overview of their distribution, variation and previous study. We will then offer two case studies which illustrate the contribution that ethnographic fieldwork such as this can make to our understanding of the construction and use of watercraft in the past. The full intention is to publish a comprehensive edited monograph that addresses the detail and variety of *hūrīs* everywhere they have been studied through the region.

## ***2. Background of the *hūrī****

Logboats are known to have operated in the Indian Ocean/Red Sea region for at least two millennia; they are described in the 1<sup>st</sup> Century AD *Periplus Maris Erythraei* (passage 15 (Casson 1989; Schoff 1912), and an archaeological example of a logboat similar to modern *hūrīs* has been excavated from the contemporary hamlet of Patannam, ancient Muziris, in Kerala, India (Selvakumar 2011). Manufacture of *hūrīs* has traditionally been associated with southern India, where they are still built, and from where they were exported on the decks of trading dhows around the western Indian Ocean region (Villiers 1940: 329; Le Baron Bowen 1952: 198). In the 20<sup>th</sup> century, Boxhall (1989: 295) noted that “the small *hūrī* a canoe... is to be found on almost every coast of the Indian Ocean”. Historically, *hūrīs* have been noted across a broad geographical range extending from the northern waters of the Red Sea, to the Horn of Africa, as far up the Gulf as Kuwait, all along the shores of Arabia and also in Southern India. The present project has recorded examples from Egypt, Sudan, Eritrea, Djibouti, Yemen, Zanzibar, Oman, the UAE, as well as Kerala in Southern India.

This project is certainly not the first to have identified and addressed these vessels. Previous studies have been conducted, mainly in the Arabian Peninsula, by preeminent maritime ethnographers of the 20<sup>th</sup> century, such as Hornell (1920: 148), Moore (1920: 138) and Prados (1997). In addition, more recent published material has originated from specific work in the Gulf (Agius 2002: 119-125; Weismann, pers. comm.), mainland Yemen (Prados, 1997) and Socotra (Jansen van Rensburg 2010). However, the present project has been able to study *hūrīs* on a local, regional and inter-regional scale, resulting we hope, in a more comprehensive study that also allows scope for comparisons between vessel types over time and space.

### ***2.2 Characteristics of the *hūrī****

A *hūrī* can be broadly classified as a small canoe-like vessel normally operated as fishing or pearling craft, a harbour boat, or a vessel tender. Traditionally, such vessels are constructed as logboats, although plank-built versions have by now been widely documented, especially in the Red Sea (fig. 2), while in some areas fibreglass versions are produced. Where differences in construction occur, the observed commonality of function, overall form, and name, has enabled such vessels to be grouped together. In keeping with their logboat

origins, *hūrī* are traditionally double-ended and propelled by paddle or sail; the former for shorter journeys or harbour work, and the latter for longer distances. They typically range from 3.5-10 m in length.

If it can be said that there is an original type of *hūrī*, then the log-based form found in historical and archaeological sources and briefly described above is probably it: log-based vessels of this type seem to have a considerable antiquity in the region (see above).

Because of this, it is tempting to see their use as continuing from antiquity to the present day, and to date there is nothing to contradict this view.

In their purest form, such vessels have no additional features such as extensions or projections, although a notable feature is that they are usually constructed with a series of ‘false frames’ hollowed out of the inside of the vessel (fig. 1 and 2). Similar features have been documented in the archaeological record of other logboats from a range of temporal and spatial contexts (e.g. McGrail 1998: 75-6; Ossowski 2009: fig. 3; Radić Rossi 2009: 137-142), including the vessel from Muziris (Selvakumar 2011). The potential interpretative significance of these features is returned to below.

### ***2.3 Variation of *hūrī* features***

Although the logboat forms the basic vessel type, there is a huge geographical variation among boats identified as *hūrī* by their owners and users, a variety comparable to that witnessed in other logboat types, past and present (examples in McGrail 1998: Chapter 6). Among logboats, these include expansion and/or extension to increase freeboard, incorporation of a transom stern to receive an engine, or extending the bow to increase seaworthiness. Plank and fibreglass built versions may likewise be double ended or have a transom stern. These display a desire to perpetuate the *hūrī* concept even after the original Indian logboats became unavailable: plank and later fibreglass variations can be seen as local attempts to continue to “have the same boat” even after the supply from the original point of manufacture has ceased.

Many of the log-based *hūrī* recorded during the project had been modified by extending the sides of the vessel, and it is clear from the cross-sections recorded in the illustrated example (fig. 3) that it takes the form of a classic extended logboat, with only a single wash-strake added (in a lap-strake technique). Other boats have side or wash-strakes

added in a flush-laid manner. The addition of strakes is typically associated with the insertion of frames: clinker extensions invariably have stepped frames. Some examples noted in Mokha, Yemen had been altered more radically, with the entire vessel cut in half amidships, and the two halves re-joined using planking along the base of the hull that widened (expanded) and lengthened the hull considerably.

In addition to the wide variation in log-based *hūrīs* noted above, plank-built versions are to be found, particularly in the Red Sea, and today in greater numbers than the log-based original. These are built in the same overall tradition as other fishing vessels in this area; mixed construction, based generally on master frames around which the lower planks are assembled, with additional frames added as the planking rises. They retain the *hūrī* name: in general they are the same size, serve the same function, and fill the same niche in maritime communities as the log-based original: from a distance they even look similar. These craft seem to have come into existence as a result of the dwindling supply of log-based *hūrīs* from Kerala some 30 years ago as a result of timber shortages. The solution to this problem has been to construct a boat to fulfil the purpose of a *hūrī*, that carries the same name, but is built in the local building tradition, using imported timber.

Some examples of plank built *hūrīs*, mainly from the southern Red Sea and Gulf of Aden, are obviously more seaworthy in their form, with extended bows and additional wash-strakes. This type of vessel was recorded by Prados (1997) along the Tihamah coast in Yemen (Red Sea) in the early 1990s. It was originally based on imported logboats from India but gradually modified to become a plank-built vessel. As Prados (1997: 186) states “although unrelated in technology and form to their predecessors, contemporary *huwari* are their functional equivalents”.

A wide range of fastenings are visible across the *hūrī* types we observed. A log-based *hūrī* by definition does not have much requirement for fastening during its initial construction. However, when logboats are extended and plank-built variants constructed, a variety of fastenings are used including clenched iron or copper nails driven from outboard to inboard, and roved iron nails. Plank-built *hūrīs* are for the most part fastened together using iron nails, again secured from outboard to inboard. A variation to this are plank-built *hūrīs* that were encountered during our work in Kerala, where builders adopted a planking

technique utilising a stepped edge-to-edge joint secured with rove iron nails (see the first case-study below).

Repairs to the main log hull also display a variety of fastenings and materials, often the result of cannibalising other vessels or artefacts. The damaged area of the hull is cut out, and a patch is made from a variety of materials, including defunct logboats, glass fibre, metal and plastic: the patches are held in place by a variety of fastenings ranging from iron nails, tacks and staples, to multiple small bamboo dowels. *Hūrĩ* therefore illustrate as much variety in their construction detail as in their outward form, yet remain a single vessel category within the perception of their builders and users.

### ***Case Studies***

Both case studies presented here draw, appropriately, on fieldwork conducted in Kerala, the original place of *hūrĩ* construction. The first addresses the conception of vessel form through the building of a log-based, plank-built vessel that has been conceived to have the outward appearance of a logboat. The second considers a specific feature that appears in *hūrĩ* throughout their geographical distribution; these are the ‘false frames’ visible on *hūrĩ* logboats that are carved during construction. The latter case-study has clear implications for maritime archaeology because of the presence of similar features on archaeologically documented vessels. In addition, besides contributing to the accompanying academic discussion associated with them (see McGrail 1998: 75-6), it more fundamentally speaks to a wider appreciation of reasoning behind the variety of approaches to boat construction through time and space.

#### ***First case study: the conception of vessel form***

The (apparently original) method of *hūrĩ* construction in Kerala entails the hollowing-out of a single log to form a vessel that we classify as a simple logboat. To this base has been added such variations as described above, including internal frames and added planks, as a means to construct what we term extended logboats. Recently, *hūrĩ* builders in Kerala have adopted another building method – in essence, a shell-based method of building in which planks together with a log base, are carved from a suitable tree and fastened together using

stepped overlapping joints in the plank-edges described above and secured using roved iron nails (Fig. 3 and 4).

This Keralan approach is undoubtedly a plank-built vessel, even though the result is in essence very different from the plank-built *hūrī* constructed in parts of the Red Sea. Apart from the obvious shell-based (Kerala) and mixed/frame-based (Red Sea) difference, the resulting vessel form is conceived to look exactly like the log-based *hūrī* that would have been built in earlier generations, when large timbers were readily available. Indeed, from a distance it is often impossible to tell the difference between the Keralan log-based, plank-built vessel and its logboat counterpart, especially when the characteristic dark sealant has been applied. The planks are often derived from a single tree large enough to produce many carved planks, but which is not big enough to permit the full-scale hollowing out required by the original technique.

Based on our observations in other parts of the Indian Ocean, where older log-based *hūrī* have been repaired and maintained using similar techniques, it is probable, that this Keralan log-based, plank-built method was originally developed as a means of repairing vessels. As the available timber needed for *hūrī* building diminished, it was utilised to build entire boats. Thus, a great many of the plank-built vessels, such as those of the Red Sea, developed organically in response to a need to repair a *hūrī* or from a desire to extend or expand with planks; however those studied in Kerala were pre-determined as log-based, plank-built boats that could be built as a means to replicate the fully logboat *hūrī*. It is worth considering that no two vessels are the same, other than in their overall outward appearance, because the planks used to create each vessel are carved into a different shape each time, depending on the nature of the original tree.

This ethnographic perspective offers the opportunity to explain and interpret a specific building process. Based on archaeological observations of building methods alone, possibly from only one or two archaeological examples glimpsed in fragmentary form, it is likely that Keralan log-based, plank-built *hūrī* would be classified as a separate vessel type from the full logboat original. Taking as an example the widely adopted, rigorous schema set out by McGrail (1998: 4-11) we would classify the difference between these two vessels as, in the case of the log-based *hūrī*, a structural class C1 of “shell-built by reduction” while in

the case of the Keralan log-based, plank-built *hūrī*, structural class C4 of “shell-built by reduction and construction”.

In reality of course, both building methods should be considered as complementary ways of producing the same vessel and both techniques could be, and are, used by the same builder. The approach chosen depends on the availability of timber: both techniques share many of the tools, skills, materials, social contexts and thought-processes required to shape the vessel. Furthermore, it is possible to argue that the builder’s mental conception of the finished vessel was the same in either case; clearly evidenced by their twin-like outward appearance. In this regard, as ethnographers, we simply see a *hūrī*, a single vessel, conceived with a single final form and purpose, but reached through quite different building techniques.

Similarly, in Arabia the same mental-conception process of mimicry of form has been under way with the construction of plank and fibreglass versions of the *hūrī*. Naturally, the outcomes are not nearly as ‘convincing’ as the Keralan mimics, but they seek the same objective: to recreate the original logboat form from available materials. Again, from a conventional archaeological perspective these would be regarded as entirely different construction techniques and underlying technologies, but in essence they are an attempt to achieve the same vessel type.

This case study therefore poses an interesting question for maritime archaeologists: do the rigid definitions (frame-first, shell-first, etc) that for so long have aided our interpretation of vessel types actually distract us from engaging with the traditions that originally created them, and obscure the social context we seek to understand behind the artefact? Have we taken the principle of defining a vessel by its construction technique to the point where we must now begin to pay equal attention to the views of the people that built and used them and the manner in which they are perceived by their builders, in order to fully understand such techniques, rather than simply classifying them according to their functional attributes so often emphasised in academic discourse?

### ***Second case study: the problem of ‘false frames’***

The second case study entails the further study and discussion of the false frames highlighted above. Such features are archaeologically attested and remain a riddle to

maritime archaeologists (for a summary see McGrail 1998: 75-78; 2001: 174-175). Discussions have noted the failure of such features to increase the strength of the hull (e.g. Hornell 1970: 187), or have been attributed to aspects of the construction process (Lethbridge *et al.* 1951: 230; Arnold 1996: 157-8), to help delay timber splitting (Tanner, Pers. Comm.), or are associated with cargo stowage or crew distribution and function (Clark 1952: 287; Beaudouin 1970: 86). Recently, Boon and van Rietbergen (2009: 384) have suggested that false frames do not contribute to the transverse strength of the vessel but do enhance the 'reliability' of the structure. Given the diversity of interpretations, these features are clearly worthy of further investigation.

During the recording of *hūrī*s in Kerala, the opportunity was taken to visit a number of sites where they were still being built and to interview a recently retired boatbuilder at Chalyam, south of Calicut. In all cases, the *hūrī*s observed were either built from a single log, or from a number of carved planks, formed into the shape of a logboat, as described above. It was notable that false frames were included in both types of vessels, and spanned the width of the hull; in the log-based, plank-built vessels the profile of the false frame was likewise continued from gunwale to gunwale, across the carved strakes (fig. 4). The boat builder from Chaliyam was able to offer two key pieces of information concerning the use of false frames: firstly, that the primary purpose of including the false frames in the vessel during the building process was as a means to strengthen the hull; and secondly, that the incorporation of such false frames, termed in Malayalam *manikil*, was a primary feature of *hūrī* construction. He elaborated that a vessel without false frames could not be considered a *hūrī*.

This information regarding the strengthening characteristic of the false frames appears to contradict academic opinion (outlined above), which has argued that such features do not add strength to the hull, either laterally or longitudinally. However, the fact remains, that *in the opinion of the builder of the vessel*, the purpose of the false frames in a *hūrī* is to strengthen the hull. We may therefore conclude that, in this particular context, the creation of false frames in a logboat hull takes place for entirely functional reasons *in the eye of the boat builder*, even though it is considered by many academics to fulfil no such purpose. Such a scenario would be impossible to discern from the archaeological record alone, where interpretation is likely to be based solely on scientific testing or simulation of materials and



structure. The boat-builder's perception of the purpose of this feature is very different, however; it is believed and accepted that such features add strength to the vessel. In such a scenario, the physical reality of whether or not the feature actually adds strength is largely irrelevant; the feature is included because of the builder's perception of it. It is only through ethnographic investigation that we are able to access such nuanced appreciation of the social context behind physical features that have perhaps been the basis of the continuity of this tradition over long periods of time.

To this insight may be added the fact that false frames are one of the defining characteristics of the vessel and one of the features that help to define and distinguish it *in the eyes of its builder* and the wider maritime society using it. The importance of such features in India can perhaps be seen in their continual re-creation when a vessel is repaired, or when additional elements are added during the building process. Care is taken to ensure that the vessel retains the false frames in a coherent manner, even in plank-built vessels where it is clear that they have no structural benefit. It is of further interest to note that when repairs are made to a *hūrī* outside India, operating in a different social context, the false frames are entirely ignored in the repair process, and no attempt is made to ensure their retention on the repair patch. Within the context of Keralan *hūrī* building, false frames clearly have a status that goes beyond a simplistic functional operation as part of the vessels structure.

### ***Conclusion***

The investigation and on-going interpretation of the Indian Ocean *hūrī* when viewed from an ethnographic perspective demonstrates the value that ethnography offers to the archaeological interpretation of watercraft. The *hūrī*, as a class of vessel, demonstrates a great variety of maritime technology; from its various outward forms, to a range of methods of propulsion, building materials, purpose of use, social context and working environment. The modern extant context of this traditional vessel type also means that it has exceptional potential for asking interpretative questions that can inform our understanding of maritime archaeological remains.

The case studies presented here question our use of two long-held viewpoints regarding the classification of watercraft through their construction tradition, and the

interpretation of their outward features from an overtly functional perspective. We recognise that a single ethnographic case study cannot be applied in a generalised way to interpret the breadth of the maritime archaeological record. However, what we are attempting to do is demonstrate different ways of thinking about watercraft. The great strength of ethnographic research is that it presents the opportunity to ask questions directly of the builders and users of vessels. Indeed, in the case of the *hūrī*, we can ask questions regarding vessel types and constructional features for which, given the Patannam example cited above, there are direct archaeological parallels.

To echo Sean McGrail (1984: 149-150), the investigation of *hūrīs* through a maritime ethnographic approach does not offer an explicit answer of how something *was* done in the past, but it does broaden our perspective of how something *might have been* done. Our archaeological interpretation must subsequently be richer and more nuanced as a result.

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## Figures



Fig. 1. *Hūrī* ready for use on the beach at Calicut, Kerala. This example used for fishing by a single fisherman, it is rigged for sailing as well as being propelled with a single paddle when leaving/returning to the beach. It is primarily a logboat hull, with some small areas of repair. A false frame is visible underneath the sail and adjacent to the central thwart in the photograph (Photo: J. Whitewright).

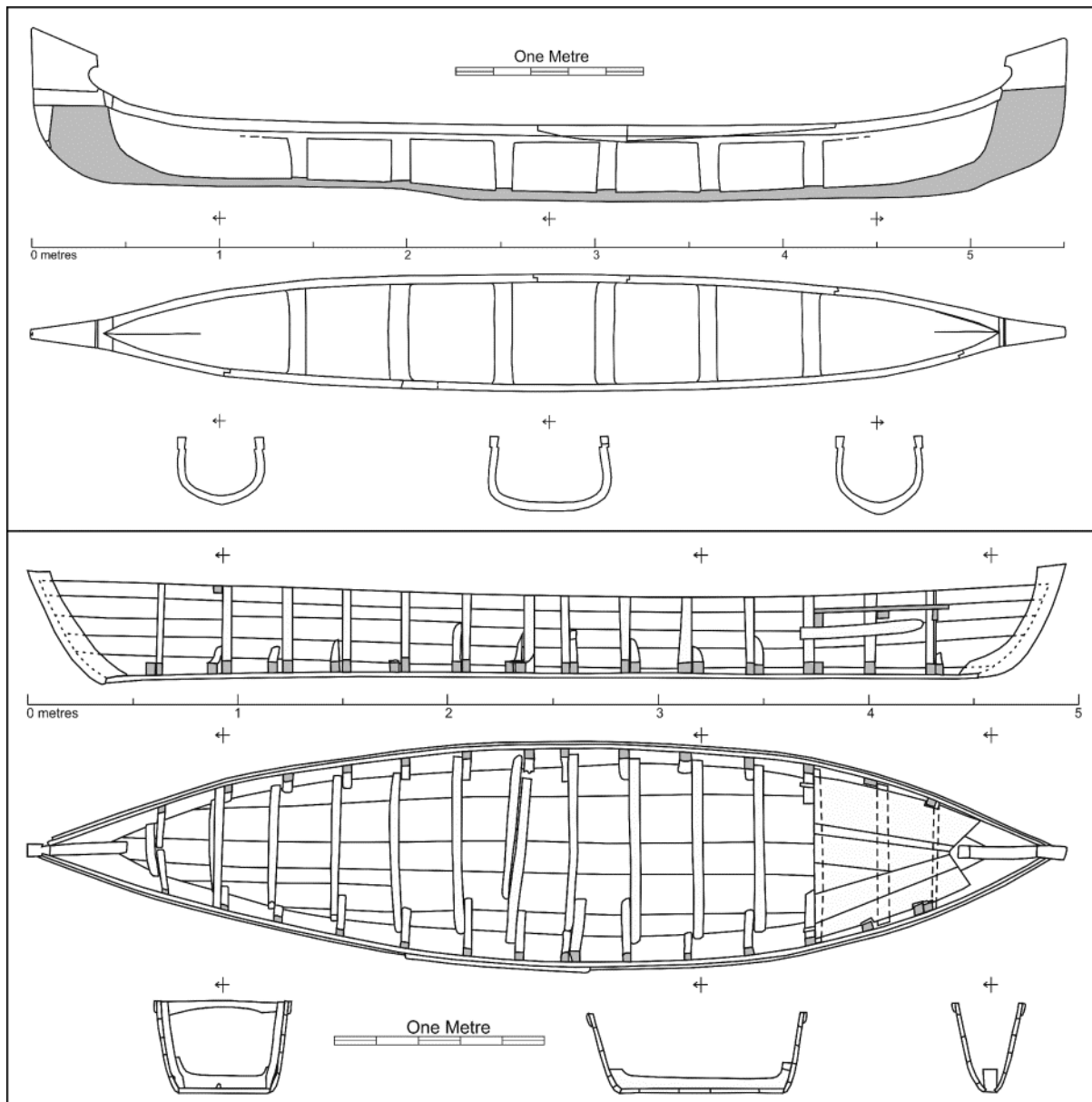


Fig. 2. (Above) Plan of a fully log-based *hūrī*. Housed in the collection of the International Sailing Craft Association, Eyemouth. The 'false frames' created by the builder as a series of transverse ridges left proud of the vessel's hull can be clearly seen in the profile view. (Below). Plan of plank-built *hūrī* recorded at Quseir, Egyptian Red Sea coast (University of Southampton).

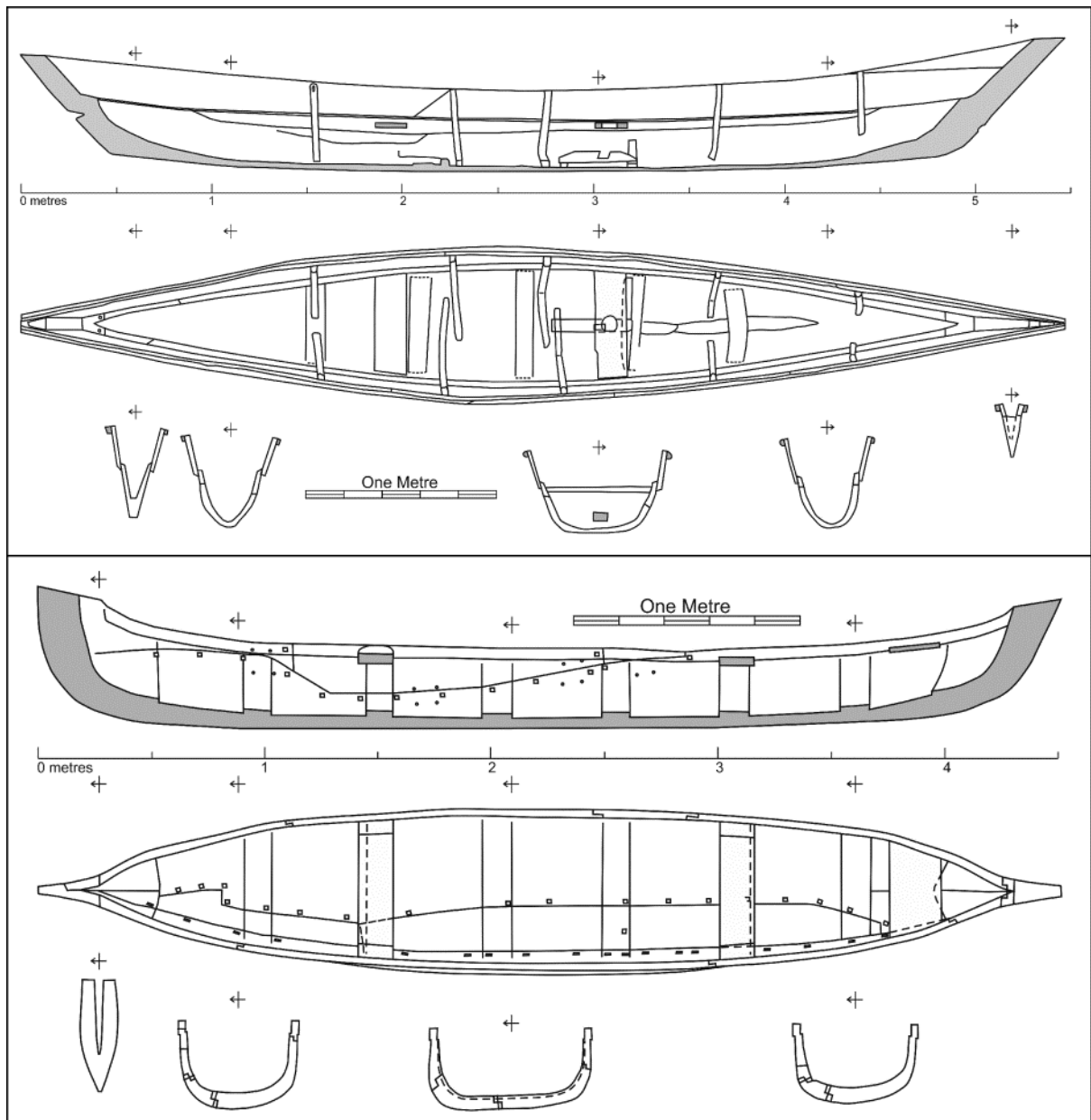


Fig.3. (Above) Plan of log-based *hūrī* with extended planked sides recorded at Massawa, Eritrea (University of Southampton). (Below) Plan of recently constructed carved-plank *hūrī* recorded near Calicut, Kerala. The vessel is a plank-built by carving planks from a single tree and assembling them to resemble a logboat, including 'false frames'. (University of Southampton).



Fig.4. A false frame on the log-based plank-built *hūrī* illustrated in figure 5. The false frame occupies the log-base of the vessel, but also clearly extends across the additional shell-based planking that is used to form the shape of the vessel's hull. The iron rivets used to fasten these planks together are also visible. Scale = 20cm (Photo: J. Whitewright).